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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project	Date	Author

TITLE

FOREST INSECT SURVEY OF SEQUOIA NATIONAL FOREST

Season of 1941

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By
J. E. Patterson
Berkeley, California
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Berkeley, California
January 12, 1942

FOREST INSECT SURVEY OF SEQUOIA NATIONAL FOREST

Season of 1941

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FOREST INSECT SURVEY OF SEQUOIA NATIONAL FOREST

Season of 1941

The 1941 forest insect survey of the Sequoia National Forest was made during the period September 17 to 22, 1941. The survey crew was made up of G. R. Struble, C. B. Eaton, H. L. McKenzie, and J. E. Patterson of the Berkeley staff of the Bureau of Entomology and Plant Quarantine. The entire crew cruised that part of the forest north of Sequoia Park. Eaton and Patterson working together covered the southern part of the forest.

The survey was of the reconnaissance type, supplemented by plot cruises and intensively covered road strips. All the areas covered in 1940 were again cruised and the methods used were the same as were employed in that survey. Some additional territory on the west, and in the southern part of the forest, was covered in this last survey.

All the previously established plots were intensively cruised. The location of these plots are at Whittaker Forest, Woodward Creek, and at Camp Nelson. The Atwell Mill plot, in the Sequoia Park, is also included since it is representative of nearby National Forest lands. Loss data for the past three years on these plots are shown in Table I. For location of the sample plots and infestation units reference is made to the map attached to the Forest Insect Survey report of December 19, 1939.

GENERAL INFESTATION CONDITIONS

As in previous reports the general infestation conditions are reported by infestation units. A summary of the loss estimates for the past two years is shown in Table II.

In general the infestation conditions in pine during the year were favorable, registering a decided decrease in insect caused losses in all the units. There was an appreciable decline on the better sites and a pronounced drop in pine losses throughout the marginal stands. Perhaps the greater reduction has occurred in sugar pine infestations. That at Ten Mile Creek, which was relatively high last year, has almost completely disappeared. The same condition holds true in the forests around the General Grant Section of Kings Canyon National Park. There was a slight increase in Scolytus infestations in fir, which were generally distributed through these stands. Infestations in Jeffrey pine were definitely down in all stands of this species.

Some apprehension was felt by forest officers during the summer regarding the results of bark beetles breeding in windthrown timber on the west flank of the Sierra. One such area in the Kings River region was given special examination with the result that very little insect breeding was found to have taken place in the windthrown trees. This windfall occurred in February 1941 and at the time of examination in September had been subjected to insect attack for a period of 7 months during the season of greatest insect activity. Ponderosa pine, sugar pine, Jeffrey pine, and white fir were all well represented in this material. Outside of a few attacks by the Dendroctonus beetles and Scolytus, the material was not infested, and the cambium in many trees was still green. No broods had developed from the few attacks found. A very good reason why these windthrown trees were not heavily attacked is because of the low insect population throughout the adjacent forest. It has been the history of other windthrown slash areas in this region that bark beetles continue to breed up in the down material until the second season following the storm and then begin to attack green standing trees in the area. There is still the possibility that trouble may develop next year.

Whittaker Area

This area comprises about 30,000 acres of good site forests which have in past years suffered greatly from insect attacks. During the last three years, however, these insect caused losses have greatly declined. During the past two years a 40 percent decline has occurred. Current losses are considered to be definitely subnormal throughout the area. Insect losses on the check plot during the year were largely confined to small sized trees of the marginal type. Infestations in fir were negligible. The same conditions prevail throughout the adjacent Whittaker Forest and on the approaches to Redwood Mountain.

It is estimated that the current infestation, in all species, will average about 4 trees per section.

Woodward Creek Area

In this high altitude area insect losses have been largely confined to Jeffrey pine and white fir. During the year losses in both species declined to a point of practically no importance. The combined losses in all species does not exceed 5 trees per section. Cruise of the sample plot on Woodward Creek showed that the current loss is about equally divided between Jeffrey pine and white fir.

Mineral King Area

Insect caused losses in pine on this small area of mixed conifers have remained about static during the past two years. Infestations are definitely endemic and are causing a minimum amount of loss. Recent losses in fir have slightly increased, but are still low. Present trends are toward decreasing losses in pine and increased losses in fir.

Camp Wishon Area

This is primarily a ponderosa pine area of marginal type. Past insect losses have been severe. A decline in these sustained losses began in 1938 and the downward trend has been consistent since that year. The current loss will not exceed 2 trees per section throughout the area. This area is largely used for recreational purposes and as such warrants full protection of the already depleted forest. The area should be examined frequently to detect any increased infestation, followed by prompt control work if such measures are warranted.

Camp Nelson Area

Management of this area in regard to insect losses should be identical with that of the Wishon area since it is also primarily a recreational region. Current insect losses are low, registering a sharp decline since 1940. It is estimated that the total loss sustained during the past year will not exceed 30 attacked trees over the entire area.

Tule River Area

This large area includes the fringe type forests on the west side slope south of the Tule River to Hot Springs. Past infestations have been severe, so that the forests have been greatly depleted. However, during the past 4 years, insect losses have been endemic. Losses further declined in 1941. The estimated current infestation does not exceed 5 attacked trees per section. This area includes a part of the Tule Indian Reservation.

Kern River Area

This far south, intermountain area was set up last fall to survey the west Kern River drainage. The forest is composed of mixed species, with Jeffrey pine and sugar pine predominating. Past insect losses have not been excessive, but a high normal infestation has persisted for years. Recent infestations have indicated a trend toward decreased losses. The current infestation is estimated to amount to 200 attacked trees, or between 4 and 5 trees per section.

RECOMMENDATIONS

Because current infestations throughout the forest are endemic, with a decided trend toward decreasing losses, control work is neither warranted nor recommended.

It is suggested that, if possible, frequent inspections be made of conditions on special use areas where even minimum insect losses are damaging to recreational values.

It is also recommended that a thorough examination be made into conditions which may develop in the areas of windthrown timber to determine if bark beetles and wood borer infestations develop during the second year after windthrow. This examination should be made in late May or early June 1942.

TABLE I. MEASURED SAMPLE PLOT LOSSES - 1939, 1940, 1941*

Sample Plot	Species	1939 Number Trees	1939 Trees per A.	1939 Volume B.M.	1940 Number Trees	1940 Trees per A.	1940 Volume B.M.	1941* Number Trees	1941* Trees per A.	1941* Volume B.M.
Woodward Creek 160 acres	J.p.	12	.08	18,000	9	.06	8,440	2	.01	2,550
	L.p.	1	.006	690	0			0		
	Pine Total	13	.09	18,690	9	.06	8,440	2	.01	2,550
	Fir	2	.01	1,850	8	.05	18,790	2	.01	2,770
	Plot Total	15	.1	20,540	17	.11	27,230	4	.02	5,320
Whittaker 160 acres	P.p.	2	.01	3,000	2	.01	140	1	.006	490
	S.p.	1	.006	300	2	.01	460	3	.02	1,460
	Pine Total	3	.02	3,300	4	.02	600	4	.02	1,950
	Fir	1	.006	550	1	.006	550	0		
	Plot Total	4	.02	3,850	5	.025	1,150	4	.02	1,950
Atwell Mill 80 acres	P.p.	1	.01	140	0			1	.01	2,360
	S.p.	0			1	.01	4,080	1	.01	1,500
	Pine Total	1	.01	140	1	.01	4,080	2	.02	3,860
	Fir	1	.01	640	0			3	.03	4,270
	Plot Total	2	.02	780	1	.01	4,080	5	.06	8,130
Camp Nelson 120 acres	P.p.	4	.03	7,120	0			1	.01	890
	S.p.	1	.01	500	1	.01	300	1	.01	1,510
	Plot Total	5	.04	7,620	1	.01	300	2	.02	2,400

* Data incomplete. Total loss will not be visible until June 1942.

TABLE II. ESTIMATED UNIT LOSSES

Area	Acreage	1940		1941	
		Number Trees	Volume B.M.	Number Trees	Volume B.M.
Whittaker	30,000	200	111,000	120	60,000
Woodward Creek	14,000	165	100,000	90	40,000
Mineral King	10,000	30	25,000	30	25,000
Camp Wishon	13,000	35	65,000	20	18,000
Camp Nelson	20,000	60	50,000	30	20,000
Tule River	30,000	200	80,000	150	60,000
Kern River	32,000	300	150,000	200	100,000
Totals	149,000	990	581,000	640	323,000